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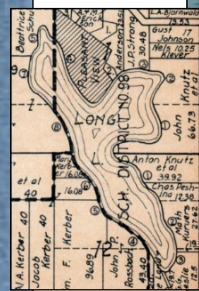


Minnesota Suburban Lakes Projects Series

Lotus Lake Sonar Survey Project Report



*Central High Boy Rescues
Two When Boat Tips Over*



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Acknowledgments

Maritime Heritage Minnesota (MHM) thanks the People of Minnesota for their support of the Minnesota Historical and Cultural Heritage Grant program, part of the Clean Water, Land and Legacy Amendment; without the MHCH Grant MHM received to conduct this work the project would not have gone forward. MHM thanks the Grants Office of the Minnesota Historical Society for their efforts. The Minnesota Suburban Lakes Projects could not have been completed without the support and skill of MHM volunteers Kelly Nehowig and Josh Knutson. MHM thanks DNR Officers Kong Moua and John Nordby for their time and expertise. This project could not have been completed in a timely fashion without the consideration of MHM's Chair and Commodore Michael F. Kramer for the on-land storage of MHM's boat. Lastly, MHM thanks our Board of Trustees Mike, Deb Handschin, and Steve Hack for their continued support.

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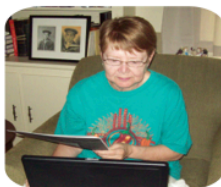
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MHM IS A 501.(c).3 NON-PROFIT CORPORATION DEDICATED TO THE DOCUMENTATION, CONSERVATION, AND PRESERVATION OF MINNESOTA'S FINITE MARITIME CULTURAL RESOURCES

“...grants have allowed a small St. Paul-based nonprofit, Maritime Heritage Minnesota (MHM), to re-establish the discipline of underwater archaeology in Minnesota. Without this support, MHM could not have conducted its groundbreaking nautical archeological and maritime historical research.”

~Steve Elliott, Former Minnesota Historical Society CEO and Director, January 2015

Introduction

Wrecks and the artifacts associated with them tell a story. Removing or otherwise disturbing artifacts, treating them as commodities that can be sold, obliterates that story. Nautical archaeological and maritime sites are finite, and are significant submerged cultural resources. Nautical, maritime, underwater, maritime terrestrial – Maritime Heritage Minnesota's (MHM) deals with all of these types of sites throughout the State of Minnesota. MHM's Mission is to document, conserve, preserve, and when necessary, excavate these finite cultural resources where the welfare of the artifact is paramount. MHM is concerned with protecting our underwater and maritime sites – our shared Maritime History – for their own benefit in order for all Minnesotans to gain the knowledge that can be obtained through their study. MHM's study of wrecks does not include the removal of artifacts or damaging the sites in any way. MHM does not raise wrecks or 'hunt' for 'treasure'. Submerged archaeological sites in Minnesota are subject to the same State statutes as terrestrial sites: the Minnesota Field Archaeology Act (1963), Minnesota Historic Sites Act (1965), the Minnesota Historic District Act (1971), and the Minnesota Private Cemeteries Act (1976) if human remains are associated with a submerged site. Further, the case of *State v. Bollenbach* (1954) and the Federal Abandoned Shipwrecks Act of 1987 provide additional jurisdictional considerations when determining State oversight and "ownership" of resources defined by law as archaeological sites (Marken, Ollendorf, Nunnally, and Anfinson 1997, 3-4). Therefore, just like terrestrial archaeologists working for the State or with contract firms, underwater archaeologists are required to have the necessary education, appropriate credentials, and hold valid licenses from the Office of the State Archaeologist (OSA).

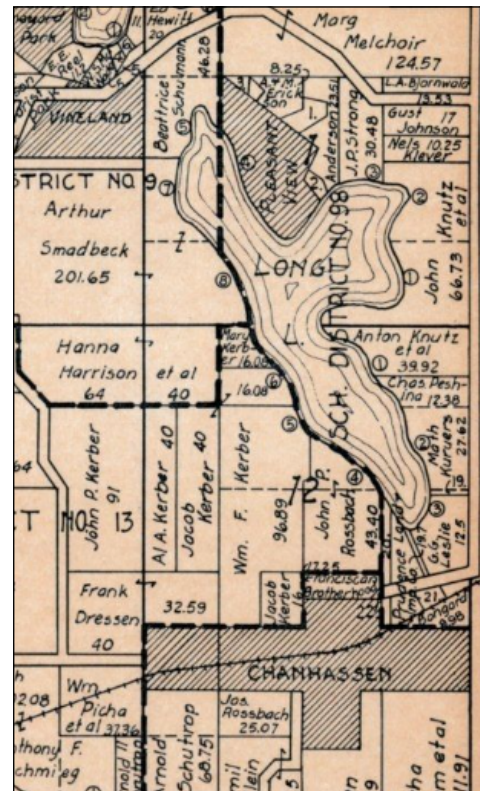
Research Design

The Lotus Lake Sonar Survey (LLSS) in Carver County is part of the MHM series of Minnesota Suburban Lakes Survey Projects (MSLS). The LLSS is a pre-disturbance Phase 1 underwater archaeological side and down imaging sonar survey; Crystal Lake in Dakota County and Lake Minnewashta in Carver County were also surveyed. Additionally, MHM conducted dive reconnaissance in Forest Lake in Washington County that was surveyed in Spring 2020. This project is a primary step toward the identification and documentation of submerged cultural resources in Minnesota. The purpose of the MSLS Project is to increase the collective maritime archaeological and historical knowledge of Minnesotans through the remote-sensing documentation of suburban lakes. The specific goal of sonar survey is the recording of anomalies on the lake bottoms and identifying their possible natures. The side and down-imaging sonar unit creates high-resolution digital images; the sonar data accumulated during the fieldwork will be reviewed and analyzed with the intention of identifying anomalies that may be

human-made sites such as wrecks (dugout canoes, steamers, sailboats, rowboats, canoes, barges, motorboats), maritime infrastructure (pier/dock remains, water intakes), other maritime-related artifacts (steam boilers, fish houses), vehicles (cars, trucks, snowmobiles), and other objects. In the future, the positive identification – and significance – of the anomalies will be confirmed for Lotus Lake, Crystal Lake, and Lake Minnewashta through underwater archaeological reconnaissance fieldwork using SCUBA, digital video, measured drawings, and maritime historical research. Regarding Forest Lake, of the 49 anomalies identified after reviewal of the sonar data, MHM investigated 8 targets for this project using SCUBA. The lakes evaluated and assessed during this MSLS Project were chosen for investigation because of their size, location, and the confirmed maritime activities occurring on and around them, determined by graphic and preliminary historical research.



Lotus Lake and land owners
(Diamond 1888).



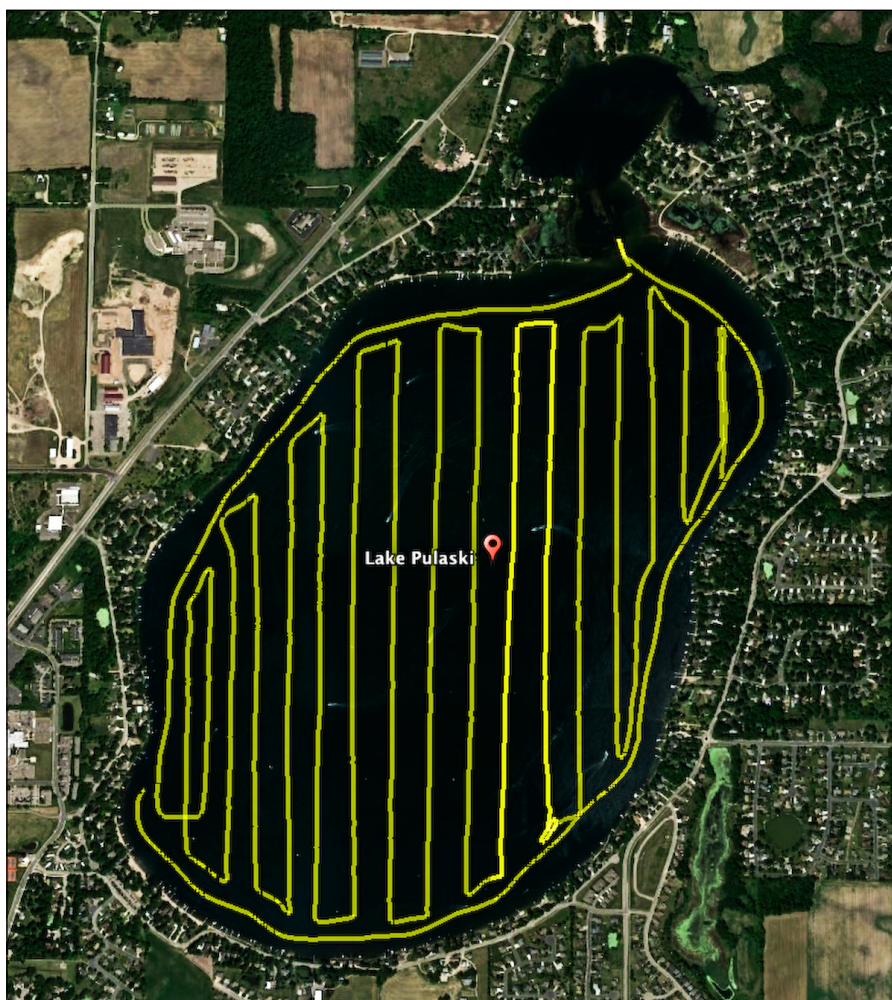
Lotus Lake, platted land
owners, and its proximity to
the business district of
Chanhassen (Hudson Map
Company 1926).



The red circle marks the
location of Lotus Lake in
Chanhassen in Carver
County.

Methodology

MHM completed the remote sensing side and down-imaging sonar scanning survey of the 245.10-acre Lotus Lake in Chanhassen in Carver County on October 18, 2020. MHM has developed a strategy when sonar scanning lakes that produces the clearest images of the bottom and thorough coverage. Firstly, MHM's research boat *Anomaly 51*, with a sonar transducer attached to the hull that extended below the vessel's centerline, scanned the periphery of the lake with a 50-100 foot side-imaging beam on both port and starboard. This 100 or 200-foot area also covered the bottom below the boat with the transducer's down-imaging beam. After the completion of the peripheral scanning, transects running as close to either north-south or east-west as the wind allowed, depending on the shape of the lake. While it is not impossible to scan with the wind hitting the boat from port or starboard in the case of strong winds (and other boat's wakes), the sonar footage that recorded in rough waters can be distorted and of low quality. In the case of Crystal Lake, east-west transects were chosen because that scheme served the lake's shape that is longer than it is wide, and wind was not a factor. During sonar data reviewal, MHM recognized 22 anomalies that might be wrecks, maritime sites, and other submerged cultural resources.



An example of north-south transects, also known as 'Mowing the Lawn'.

Archaeology and History

In archaeological terms, the area around Lotus Lake in Carver County west of Minneapolis was populated during the state's prehistory. The Enochson Site (21-CR-68) overlooked Lotus Lake on its northeast end. The finds consisted of lithics and debitage. In particular, obsidian, tools, smoothing stones, charred bone, large and small animal bones, and charcoal were recorded by a home owner tilling their garden in 1980. Similarly, evidence of another prehistoric habitation site on the southeast shoreline of the lake in the form of 2 fragmentary bi-facially flaked tools - 1 of these artifacts is the tip of a point - a re-touched flake, and lithic debitage (21-CR-43). Post-Contact sites in the area include the Carver County 'Ghost Town' site of Vineland (21-CR-r) that was located northwest of Lotus Lake. Comprised of summer homes, no physical remains of the town have been located. Another 'Ghost Town' called Pleasant View (21-CR-n) was located to the northeast of the lake. A village and summer resort, no physical evidence of the town has been identified (Enochson 1980; Office of the State Archaeologist, ND, 1977, 1992; Upham 1920, 83-84).

In early February 1890, Carver County Deputy Sheriff M. D. Elliott responded to a report of 4 fish houses burning at Long [Lotus] Lake, with damages placed at \$100. MHM questions whether the houses were *on* or *next to* the lake; if they were on the lake, remnants of them may be one of the anomalies identified during the sonar survey. An early Spring road trip in 1915 described, in detail, the natural setting of Long [Lotus] Lake, including its former boundary "at our left stretched the full length of Long Lake...marked very clearly the former bank of the lake, eight or ten feet higher up than the present beach, showing how materially the water had decreased.... Between the old shore and the present one are elm trees that must be at least 30 years old....The shore is quite heavily wooded and with fairly old trees and many beautiful specimens of oak, elm, maple, bass-wood, pig-nut, hackberry and iron-wood are to be found." The travelers detailed described stream 'Carleswater' that leaves the east side of Lotus Lake that meets up with Purgatory Creek¹ on its way to the Minnesota River. Following the creek, the travelers caught the 'Minnetonka car' - the Twin Cities Rapid Transit Streetcar - back to the Twin Cities (*Minneapolis Sunday Tribune* 1915; *St Paul Daily Globe* 1890).



An early Spring road trip to Lotus [Long] Lake in 1915
(*Minneapolis Sunday Tribune* 1915).

¹The stream that empties Lotus Lake is now also referred to as Purgatory Creek.

Carver Beach

A 'colony' modeled after a 100+ cottage summer housing development on Coon Lake in Anoka County, Carver Beach was established for subscribers to the *Minneapolis Daily Star* newspaper. The planned community designers touted the construction of "wide graveled streets...summer houses, pergolas, boat docks and a bath house...in the heavily wooded public park extending along the entire waterfront and fringed by a winding lake shore drive. Electric light and telephone lines have been run to the property". Another amenity offered to new summer cottage owners was the use of a furnished community Club House - the "social center" - of Carver Beach. The *Minneapolis Daily Star* sold the lots for \$69.50 with \$9.50 down and \$3.00 monthly payments. The newspaper advertised the Carver Beach properties, provided directions to the lake, and an auto shuttle from the Excelsior Amusement Park for those who arrived by TCRT streetcars. Over the next 13 years, property in the Carver Beach development that consisted of heavily wooded lots and/or cottages with shore privileges. One cottage was described as furnished with a sink and electricity. Interestingly, the lake was simultaneously referred to as Long Lake and Lotus Lake until 1939 (*Minneapolis Daily Star* 1927a; *Minneapolis Tribune* 1937, 1938b, 1939a-b).

Subscribe to the Star and Make Your Dreams of a Summer Home Come True
By Securing a Site at Beautiful

Carver Beach

The New Summer Colony Created By The Daily Star
Near Excelsior in the Famous Lake Minnetonka Resort District

All You Need Do to Take Advantage of This Unusual Opportunity Is to Subscribe for The Daily Star for Six Months



BOATING, FISHING AND SWIMMING ARE GOOD AT CARVER BEACH

There Are Plenty of Desirable Lots, But the Most Choice Will Go to Those Who Act Quickly—No Lots Reserved—First Come, First Served



A VIEW OF LONG LAKE FROM CARVER BEACH SHOWING ONE OF THE BOAT DOCKS UNDER CONSTRUCTION

All Lots One Price

\$69.50

**\$9.50 Down
\$3.00 Monthly**

NOT LESS THAN TWO NOR MORE THAN FIVE LOTS SOLD TO A SUBSCRIBER

ACT TODAY

Don't Miss This Opportunity



LOOKING ACROSS LONG LAKE FROM CARVER BEACH

Developments at Carver Beach

The entire waterfront of CARVER BEACH is being parcelled and reserved for the exclusive use of property owners. There have been constructed numerous desirable lots, including: An attractive bath house, with private dressing rooms, has been built on the ready beach and rustic summer houses and porches are being constructed to the park, adding to the natural beauty of the spot.

On a commanding hill, viewing the surrounding country, a handsome community club house has been constructed. Its opening times will be all the more set off by the grounds, consisting of a whole block, which are being planted.

The Club House is nicely furnished and will be given over to the rest and relaxation of the summerers. Here you may share your own group—play, rest, read—and take full measure of a well-earned vacation.

This Club House is the exclusive property of CARVER BEACH owners, and is restricted, as are the grounds, to their use. It will be, at all times, a center for the social activities of the residents of this community.

It will cost you nothing nor will it obligate you in any way to investigate this unusual offer. Now is the time to pick out your summer home site, because the most desirable locations will go first. First come, first served. We suggest that friends come together and select adjoining lots. This big offer is open to everybody. You have this opportunity to secure these lots by simply coming to the Office of The Daily Star and subscribing for the paper. Come today, or if you cannot call at the office, fill out and mail the attached coupon. But above all things, act and act promptly, for as we said before, the best locations will go to those who come first.

Come to The Daily Star Office (427 8th Ave. S., Atlantic 6000) Tonight and Pick Out Your Lot—or Mail the Coupon Today



HOW TO REACH CARVER BEACH

BY AUTO—Excelsior boulevard Highway No. 12, past the Excelsior Amusement Park, then take first road to the left (Chanhassen Road) 1 1/2 miles to CARVER BEACH.

BY STREET CAR—Lake Minnetonka cars to Excelsior Amusement Park, where CARVER BEACH autos will meet you.

NOTE—Lake Minnetonka, Excelsior and Tonka Bay cars leave station on North Sixth St., near Hennepin and stop at all regular car stops to receive passengers. Intersecting car lines transfer to these cars.

CARVER BEACH COUPON

MINNEAPOLIS DAILY STAR
427 8th Avenue South, Minneapolis
SUBSCRIPTION DEPT.

Gentlemen: Without obligating myself in any way, kindly send me further particulars about CARVER BEACH.

Name

Address

Phone No.

THE STAR OFFICE WILL BE OPEN TONIGHT UNTIL 10 P. M. FOR YOUR CONVENIENCE

Carver Beach Advertisements (*Minneapolis Daily Star* 1927a-b).

How to Reach CARVER BEACH
See Map Above

BY AUTO
Excelsior boulevard (Highway No. 12) past the Dance Pavilion at Excelsior Amusement Park, then take first road to the left (Chanhassen Road) 1 1/2 miles to CARVER BEACH.

BY STREET CAR
Lake Minnetonka cars to Excelsior Amusement Park, where CARVER BEACH autos will meet you.

NOTE—Lake Minnetonka, Excelsior and Tonka Bay cars leave station on North Sixth St., near Hennepin and stop at all regular car stops to receive passengers. Intersecting car lines transfer to these cars.

Come Out Today

Come to the Office or Mail the Coupon

Act Now!

First Come, First Served Absolutely No Favoritism

To take advantage of this wonderful opportunity you must subscribe to THE MINNEAPOLIS DAILY STAR. Each 6 months' subscription entitles you to secure one lot. Not less than two nor more than five lots to any individual. No lots reserved. We suggest that friends come together and select adjoining lots. This is the big offer of THE MINNEAPOLIS DAILY STAR to its friends and readers. You have this opportunity of securing these lots by simply coming to the office of THE MINNEAPOLIS DAILY STAR and subscribing for the paper. Come today, or if you cannot call at the office, fill out and mail to us the attached coupon. But above all things act, and act promptly, for as we have said before, the best locations go to those who come first.

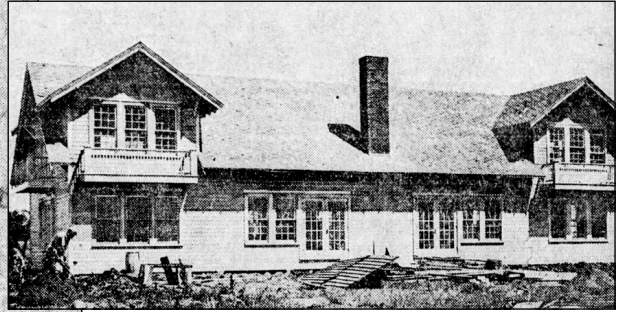
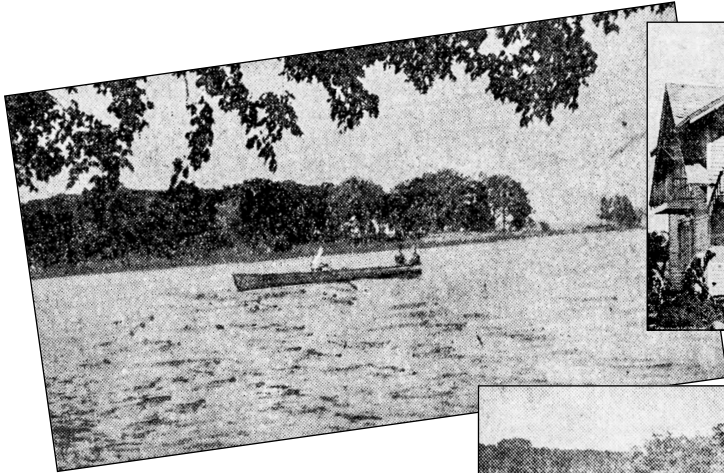
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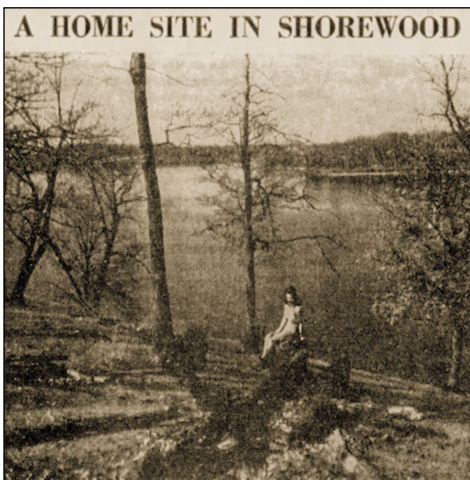


Advertisements for the Shorewood on Lotus Lake housing development featured empty lots and pre-built homes (*Minneapolis Tribune* 1939, 1940).

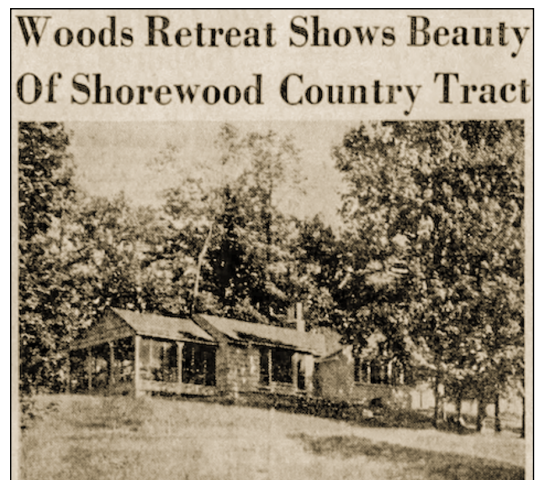


Shorewood on Lotus Lake and Other Property

Another housing development, Shorewood on Lotus Lake, encouraged Twin Citians to "have your picnic there today. With its rolling hills and peaceful glens blanketed deep with autumn leaves, this beautiful little valley should be included in your drive today. See for yourself how ideally these lakeshore and woodland tracts can be converted into country homes. Prices begin at \$445...." The developers also referred to their project as 'Shorewood Colony'. Additionally, non-affiliated cottages, houses, and land tracts were offered for purchase throughout the 1930s into the 1940s on Lotus Lake. Included in these listings were building sites comprised of several wooded and/or lakeshore lots, simple lake cottages for rent or sale, furnished cottages with lakeshore privileges, large kitchens, living rooms, and sleeping porches, and even a furnished summer home comprised of 5 rooms on 1.50 acres with a glazed-in porch (*Minneapolis Star* 1937; *Minneapolis Sunday Tribune* 1941, 1945; *Minneapolis Tribune: Morning Edition* 1937).



Advertisements for the Shorewood on Lotus Lake housing development featured empty lots and pre-built homes (*Minneapolis Tribune* 1939, 1940).



Lotus Lake Sonar Survey Results

MHM has located and identified small watercraft wrecks on the bottom of smaller Minnesota suburban lakes including nearby Christmas Lake, Medicine Lake, Lake Johanna, Forest Lake, and Prior Lake. MHM has also identified and documented small wrecks in larger lakes including Lake Minnetonka, White Bear Lake, and Lake Waconia. A capsized watercraft on Lotus Lake and the rescue of 2 men by a swimming teenager with back-up by a boater, may still rest on the lake bottom. The fishermen were on the lake during "a stiff blow" when their boat was swamped and capsized. The teenager swam 150 feet through "choppy water", holding the two men up on their over-turned boat until additional help arrived (*Minneapolis Tribune* 1938a). The acoustical signature of 1 anomaly identified during the Lotus Lake sonar survey suggests it is an overturned wreck.

Central High Boy Rescues Two When Boat Tips Over

(*Minneapolis Tribune* 1938)

MHM has identified 22 anomalies in the sonar footage recorded during the remote sensing survey of Lotus Lake. MHM has determined that the acoustical signatures of 2 anomalies indicate they are wrecks (A1, A11), another 7 targets are probable wrecks (A5, A8, A9 [overturned], A10, A12, A16, A21), 2 are possible wrecks (A2, A3), 1 anomaly may be the burned fish houses (A22) mentioned above, 3 anomalies are likely comprised of barrels (A4, A15) and tires (A6), 1 suggests a snowmobile (A19), a large target is probably a submerged waterski course (A20a-20c), and 5 other anomalies (A7, A13, A14, A17, A18). The investigation of these 22 anomalies using SCUBA will take place in the near future, prioritized by color so that the chosen targets will answer the most archaeological questions pertaining to their nature, age, condition, and historical significance: High (1), Medium (2), Low (3).



A1



A11



A10



A9



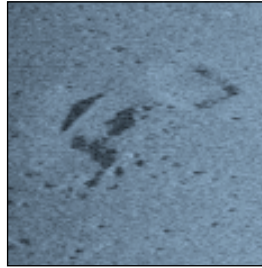
A16

A12





A2



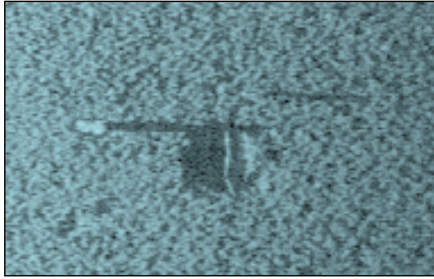
A22



A5



A19



A21



A8

A17



A13



A3



A7



A4



A6



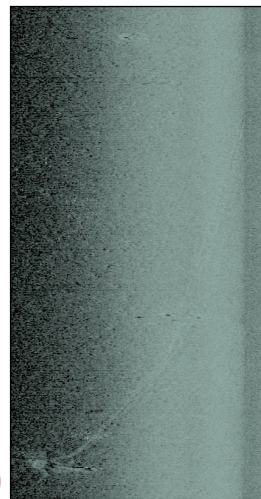
A14



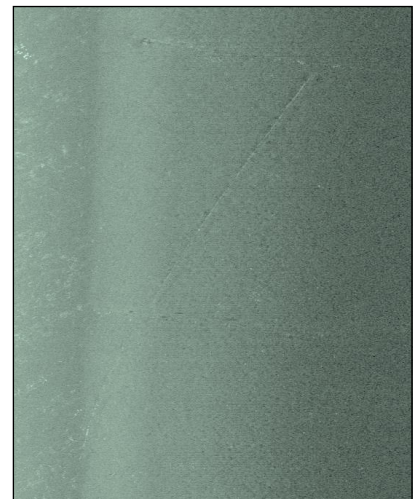
A15



A18



A20a-b



Conclusion

During the Lotus Lake Sonar Survey, MHM recorded several interesting and promising anomalies using remote sensing side and down-imaging sonar. Of the 22 anomalies recognized in the data after review, A1, A11, A10, A9, A16, A12, A22, A5, A10, and A21 will produce the greatest amount of archaeological data that will assist in future research and diving planning. In particular, the 2 wrecks (A1, A11) will greatly enhance our shared knowledge of Minnesota's Maritime History. The investigation of A1 will answer archaeological questions since it is a wreck, but she may be a small runabout with a foredeck or an open fishing boat with a forward bench. Further, the wreck has a rather wide beam and her transom appears to be buried in silt, or it may be missing; only diving on the anomaly will answer that question. Further, SCUBA reconnaissance will be used to determine the materials used to construct her and to determine her function on Lotus Lake. Contrastingly, A11 appears to be entirely different in construction when compared to A1, with a narrow beam and apparently silt-free, resting completely uncovered on the lake bottom. Although not distinct enough to identify, there are features or objects inside the hull that can only be identified during underwater archaeological reconnaissance. Anomaly 10's acoustical signature suggests that it is the stern and amidships portion of a wreck, with the bow section either buried in silt or missing - again, the anomaly must be investigated using SCUBA to answer this question. Four anomalies - that may be wrecks - lie in different positions on the lake bottom. Anomaly 9 may be a capsized watercraft - and possibly the boat involved in the 1938 accident described above. Anomaly 16 is small and boat-shaped, but otherwise indistinguishable, while Anomaly 12 has a strong signature, and may be a partially buried wreck. Similarly, Anomaly 2 appears also be a partially buried wreck, but in this case, the only visible portion of the site is forward of amidships; the anomaly is 'V'-shaped and may be the bow of a sunken watercraft. An interesting signature, Anomaly 22 may be the remains of the 4 burned fish houses that were destroyed in 1890 - if the houses were on the ice and not on the lakeshore. The site is around 11.00 feet by 17.00 in size, so it is possible that it is the remains of one or more fish houses. The last 3 higher priority targets for investigation have distinctive shapes that indicate they are likely human-made. Anomaly 5 may be a wreck but it may also be something substantial like a large log, while A19 and A21 have strong signatures, they are not identifiable without SCUBA reconnaissance. The remaining 11 anomalies are comprised of irregularly-shaped objects, a boat-shaped target, barrels, tires, and a downed cable or submerged water ski course. Using SCUBA, video, photographs, measurements, and historical research in the near future will allow MHM to understand these anomalies by determining their nature, function, condition, and placement into the underwater archaeological and maritime historical record.

MHM has recognized 116 anomalies on the bottom of the 4 lakes documented during this MSLS Project: Lotus Lake, Crystal Lake, Lake Minnewashta, and Forest Lake. Particularly important is the identification of 16 wrecks through their distinctive sonar signatures, another 26 possible wrecks, 19 probable wrecks, 2 boat lifts, canopies, fish houses, vehicles, and other maritime sites. Further, the underwater archaeological reconnaissance of Forest Lake confirmed the identifies of 6 wrecks and 1 boat lift. The exact nature of the remaining wrecks and other sites will be determined during subsequent projects centered on their investigation by using SCUBA. These future

studies will greatly enhance our shared maritime history through the recognition of submerged cultural resources and the stories behind their construction and disposition on the bottom of these particular 4 Minnesota lakes. The diversity of nautical, maritime, and underwater sites so far identified by MHM in Minnesota's lakes are tangible examples of the rich maritime history of the area. Through research, diving on wrecks and anomalies to collect pertinent data, and ensuring that the collected information is accessible by the public, MHM will continue to investigate Minnesota's submerged cultural resources into the future. The results of the MSLS Project summarized above is connected to all the work that will come after its completion. It is clear – through this Phase 1 remote sensing survey – that the types of sites that exist in the 4 smaller lakes documented during the project are diverse, archaeologically and historically significant, and worthy of great attention. Lastly, the significant data produced during this Lotus Lake project has and will be used for comparison purposes as MHM identifies wrecks and maritime resources on the bottom of other Minnesota lakes. To date, these bodies of water include Christmas Lake, Prior Lake, Lake Johanna, Medicine Lake, Lake Pulaski, White Bear Lake, Lake Waconia, and Lake Minnetonka.

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